

Patent Claims

1. A procedure for fully automatic cylinder cleaning in printing presses with central control systems, an automated wash device being used for each cylinder that is to be cleaned, characterized in that
- a) the operating parameters used to determine the optimal wash sequence program for each individual wash device are determined by accessing the central printing press control system;
 - b) in each instance, the optimal wash sequence programs for each individual wash device are determined automatically;
 - c) each individual wash device is controlled, in each instance, by the appropriate wash sequence program.
2. A procedure as defined in Claim 1, characterized in that a wash sequence central computer is used as an expansion of the central printing press control system.
3. A procedure as defined in Claim 1, characterized in that determination of the optimal wash sequence program for each individual wash device is determined by selecting the closest approximation from a number of fixed, pre-set sets of wash sequence programs.

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4. A procedure as defined in Claim 1, characterized in that in each instance, the optimal wash sequence programs for the individual wash devices is compiled by an algorithm as a function of the operating parameters that have been identified.

5. A procedure as defined in Claim 1, characterized in that the speed of rotation of the cylinder that is to be cleaned by the wash process is taken into account as an operating parameter when determining the optimal wash sequence program.

6. A procedure as defined in Claim 1, characterized in that the time of the wash process and optionally the length of the interval since the last wash process is taken into account as an operating parameter when determining the optimal wash sequence program.

7. A procedure as defined in Claim 1, characterized in that contact between the material to be imprinted and a cylinder during the cleaning procedure is taken into account as an operating parameter when determining the optimal wash sequence program.

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8. A procedure as defined in Claim 1, characterized in that when there is contact between the paper and a cylinder, information as to whether the face side or the reverse side is touching the cylinder is taken into account as an operating parameter when determining the optimal wash sequence program.
 9. A procedure as defined in Claim 1, characterized in that the paper type is taken into account as an operating parameter when determining the optimal wash sequence program.
 10. A procedure as defined in Claim 1, characterized in that the ink type is taken into account as an operating parameter when determining the optimal wash sequence program.
 11. A procedure as defined in Claim 1, characterized in that the position of the cylinder in the printing sequence is taken into account as an operating parameter when determining the optimal wash sequence program.
 12. A procedure as defined in Claim 1, characterized in that the direction of rotation of the cylinder is taken into account as an operating parameter when determining the optimal wash sequence program.

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13. A procedure as defined in Claim 1, characterized in that the quantity of dampening water used during printing is taken into account as an operating parameter when determining the optimal wash sequence program.
 14. A procedure as defined in Claim 1, characterized in that in the case of web-type printing presses, the angle of wrap-around of the web of material that is to be imprinted around the cylinder is taken into account as an operating parameter when determining the optimal wash sequence program.
 15. A procedure as defined in Claim 1, characterized in that the angle of wrap-around of the web of material that is to be imprinted is determined by way of web routing data.
 16. A procedure as defined in Claim 1, characterized in that three ranges of wrap-around angle for the material to be imprinted are detected, namely:
 - a) 0 degrees;
 - b) up to approximately 5 degrees; and
 - c) more that 5 degrees.
 17. A procedure as defined in Claim 1, characterized in that in the case of a rubber-blanket cylinder, information as to whether this is involved in ink distribution during the printing process is taken into account as an operating parameter when determining the optimal wash sequence program.

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18. A procedure as defined in Claim 1, characterized in that information as to whether the cylinder that is to be cleaned is in contact with imprinted or non-imprinted material that is to be imprinted the printing process is taken into account as an operating parameter when determining the optimal wash sequence program.
 19. A procedure as defined in Claim 1, characterized in that the correct time for starting each wash process is determined and thereafter each wash process is started automatically at this time or at the next possible time.
 20. A procedure as defined in Claim 1, characterized in that the wash programs that have been established can be checked and corrected manually from the central printing press control system.
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21. A procedure as defined in at least one of the preceding claims, characterized in that in the case of web-type printing presses with guide rollers that are preceded by at least one rubber-blanket cylinder, at least some of these guide rollers are cleaned, in that
- a) by accessing the central printing press control system, the last automated wash device before the guide rollers, as viewed in the direction of movement of the web of material that is to be imprinted, or the last automated wash device for each of the two sides of the web of material that is to be imprinted, as viewed in the direction of movement of the web of material that is to be imprinted, to which, in each instance, a cylinder that is in contact with the web of material that is to be imprinted, is selected;
 - b) at least one wash program for this automated wash device is determined, this dampening the web(s) of material that is/are to be imprinted with cleaning liquid, taking into consideration the actual, current cleaning requirement for the guide rollers by accessing the central printing press control system;
 - c) the selected automated wash device(s) is/are controlled by the wash program(s) that is/are have been established, and
 - d) the guide rollers that are to be cleaned are controlled, braked, or driven manually or from the central control post during their contact with the dampened web of material that is to be imprinted, in order to generate slippage between the guide rollers and the web of material that is to be imprinted.

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